Exercice N° 3 :

1°)

$$\left.\begin{array}{l} u_{AB} = \dfrac{q}{C} \\ \text{et } q = I \times t \end{array}\right\} \Leftrightarrow u_{AB} = \dfrac{I \times t}{C}$$

2°) $I = 10\ \mu A$

On aura $C = \dfrac{I \times t}{u_{AB}} = \dfrac{10.10^{-6} \times 7{,}2}{6} = 1{,}2.10^{-5} F = 12\mu F$

3°) $E_c = \dfrac{1}{2} C u^2 = \frac{1}{2} C \left(\dfrac{q}{C}\right)^2 = \dfrac{1}{2} x \dfrac{q^2}{C} \Leftrightarrow E_c = \dfrac{1}{2} x\ 12 . 10^{-6} x\ 6^2$

$\Leftrightarrow E_c = 216 . 10^{-6}\ J$

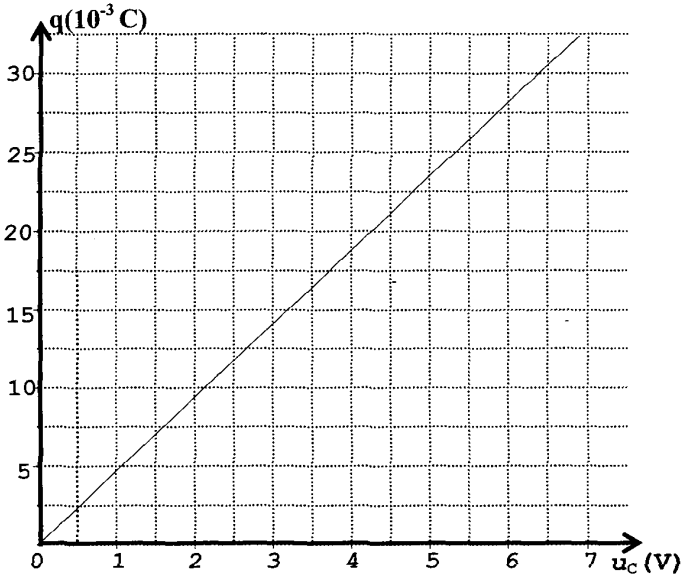
Exercice N° 4:

1°) $q = I.t$

2°)

u_c (V)	0	1	2	3	4	5	6
t (s)	0	4,5	9,5	14	19	23	28
q (10^{-3} c)	0	4,5	9,5	14	19	23	28

3°) $q = f(u_c)$



4°)La courbe $q = f(u_c)$ est un segment de droite d'éq:

$q = k\ x\ u_c$

5°)Avec $k = \text{pente} = \dfrac{\Delta q}{\Delta u_C} = 4{,}5 . 10^{-3}\ C.V^{-1}$

Or $q = C.u_c$ alors, par identification

$C = 4{,}5 . 10^{-3} = 4500\ \mu F$